

Serial No.: 10/626,253
Submission Dated August 10, 2005
Reply to Office action of July 26, 2005

RD-28667-3

Amendments to the Claims

This listing of the claims will replace all prior versions and listing of claims in the application.

LISTING OF CLAIMS:

1-31(canceled)

32. (previously presented) A method of depositing a uniform coating on a planar surface of a substrate, the method comprising the steps of:

- a) providing the substrate having the planar surface to a deposition chamber;
- b) evacuating the deposition chamber to a predetermined deposition pressure;
- c) generating a plurality of plasmas from at least one array of a plurality of plasma sources;
- d) injecting at least one reactant gas into each of the plurality of plasmas through at least one common reactant gas injector such that a first flow rate of the at least one reactant gas into a first plasma is substantially equal to a second flow rate of the at least one reactant gas into a second plasma, wherein said at least one common reactant gas injector comprising a tubular -walled structure having two linear portions parallel to each other and two end portions connecting the linear portions is disposed between anodes of the plasma sources and the substrate and is circumferentially disposed with respect to the plasma sources;
- e) flowing the at least one reactant gas and the plurality of plasmas into the deposition chamber toward the substrate; and
- f) reacting the at least one reactant gas with the plurality of plasmas to form the coating on the planar surface of the substrate.

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33. (original) The method according to claim 32, wherein at least one of the plurality of plasma sources is an expanding thermal plasma source having a cathode, an anode, and an inlet for a non-reactive plasma source gas disposed in a plasma chamber.

34. (original) The method according to claim 33, wherein the step of flowing the at least one reactant gas and the plurality of plasmas into the deposition chamber toward the substrate includes the steps of:

a) maintaining the deposition chamber at a second predetermined pressure, wherein the second predetermined pressure is less than a first pressure in the plasma chamber; and

b) expanding the plurality of plasmas from the plasma chamber into the deposition chamber toward the substrate.

35. (original) The method according to claim 32, wherein the step of injecting a reactant gas into the plurality of plasmas comprises:

a) supplying the at least one reactant gas from a reactant gas source to the at least one common reactant gas injector;

b) passing the at least one reactant gas through a first plurality of orifices in the common reactant gas injector proximate to the first plasma and a second plurality of orifices proximate to the second plasma;

c) directing the at least one reactant gas through the first plurality of orifices into the first plasma at a first flow rate; and

d) directing the at least one reactant gas through the second plurality of orifices into the second plasma at a second flow rate, the first flow rate being substantially equal to the second flow rate.

36. (original) The method according to claim 35, wherein the first plurality of orifices comprises a first predetermined number of orifices and the second plurality of

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orifices comprises a second predetermined number of orifices, and wherein the first predetermined number is equal to the second predetermined number.

37. (original) The method according to claim 35, wherein the first plurality of orifices comprises a first predetermined number of orifices and the second plurality of orifices comprises a second predetermined number of orifices, and wherein the first predetermined number is different from the second predetermined number.

38. (original) The method according to claim 35, wherein each of the first plurality of orifices has a first conductance and each of the second plurality of orifices has a second conductance, wherein the first conductance is equal to the second conductance.

39. (original) The method according to claim 35, wherein each of the first plurality of orifices has a first conductance and each of the second plurality of orifices has a second conductance, wherein the first conductance is different from the second conductance.

Claims 40-44 (cancelled)